



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,525	12/08/2003	Agapios Kyriacos Agapiou	2001U039.US	4271

7590 03/24/2005

KEVIN M. FAULKNER
UNIVATION TECHNOLOGIES, L.L.C.
SUITE 1950
5555 SAN FELIPE ST.
HOUSTON, TX 77056-2746

EXAMINER

PASTERCZYK, JAMES W

ART UNIT	PAPER NUMBER
----------	--------------

1755

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/730,525

Applicant(s)

AGAPIOU ET AL.

Examiner

J. Pasterczyk

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-79 is/are pending in the application.
- 4a) Of the above claim(s) 35-79 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-79 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/8/03
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

Art Unit: 1755

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-34, drawn to an olefin polymerization process, classified in class 526, subclass 160 inter alia.
- II. Claims 35-79, drawn to a supported catalyst and method of making it, classified in class 502, subclass 103 inter alia.

2. The inventions are distinct, each from the other because:

Inventions II and I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the process for using the product as claimed can be practiced with another materially different product, such as a Ziegler-Natta, metal carbene, or chromium oxide catalyst.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Kevin Faulkner, Esq., on 2/14/04, a provisional election was made without traverse to prosecute the invention of group I, claims 1-34.

Affirmation of this election must be made by applicant in replying to this Office action. Claims 35-79 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Art Unit: 1755

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

6. Claims 1-34 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a few particular metallocenes and one particular support, does not reasonably provide enablement for any other particular reagents. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims.

The claims are directed to olefin polymerization processes using essentially any metallocene and any support resulting in some particular optimized result with reasonably limited amounts of metallocene and cocatalyst. However, the specification only discloses such optimized results for one support material and a rather circumscribed number of metallocenes, all having zirconium difluoride moieties in them. This is far too small a number of working examples to provide enablement for the extremely broad set of supports and metallocenes recited in the present claims. Chemistry is known to be an inherently unpredictable art, and catalysis even more so, hence the burden on applicants to provide sufficient enablement for broad claims is greater than it would be in a more predictable art.

7. Claims 1-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1755

In claim 1, the matter in the last three lines appears to be merely aspirational or functional and not necessarily a result only of the limitations recited earlier in the claim, hence the claim has what amounts to missing steps and appears to not yet be properly enabled. In the penultimate line it is not clear that “catalyst compound” should not be --catalyst system-- since (b) uses the latter term.

In claims 6, 15 and 16, the term “fouling index” appears to be rather subjectively measured as well as not really limiting the recited process since it does not recite any steps but merely a result of what may be as-yet not recited limitations; see the remarks on claim 1 above.

In claims 13, 14, 17 and 18, the properties recited are not necessarily the result of the limitations already recited in the superior claims and hence are merely aspirational as well as not necessarily being properly enabled.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-4, 6-23 and 26-34 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hoel, USP 5,001,205 (hereafter referred to as Hoel).

Art Unit: 1755

Hoel discloses the invention substantially as claimed (col. 8, l. 8-28; examples; tables I-III).

Hoel lacks explicit disclosure of the bulk density of the polymer produced using its process.

However, the routineer in the art would have easily been able to measure the bulk density of the polymer product made using the method of Hoel and thereby ascertain whether or not it reads on the recited bulk density of the present invention.

Since the prior art appears to describe and teach the invention as claimed on the basis of inherent property characteristics which either anticipate or render obvious the claimed process, an alternative 102/103 rejection is deemed appropriate, and the burden of proof that it does or does not shift to the applicant as in *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

11. Claims 1-3, 6-23 and 26-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuramoto et al., EPO 0 767 184 (hereafter referred to as Kuramoto).

Kuramoto discloses the invention as claimed (col. 3, l. 40-51; col. 4, l. 1-53; col. 5, l. 5-37; col. 6, l. 12-21; col. 7, l. 8-33; examples).

12. Claims 1-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuramoto as cited above.

The disclosure of Kuramoto has been discussed above.

Kuramoto lacks disclosure of an inorganic oxide support, that the metallocene has fluoride ligands, or the presence of an antistatic agent.

However, use of inorganic oxide supports is conventional in the art of olefin polymerization processes, as is the use of metallocene fluorides and antistatic agents.

Art Unit: 1755

It would have been obvious to one of ordinary skill in the art to apply that skill to the disclosure of Kuramoto with a reasonable expectation of obtaining a highly-useful olefin polymerization process with the expected benefit of less fouling of the polymerization reactor.

13. Claims 1-4, 6-18, 20-23 and 26-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Agapiou et al., USP 6,090,740 (hereafter referred to as Agapiou).

Agapiou discloses the invention as claimed (col. 3, l. 1-12; col. 5, l. 13-25, l. 39-63; examples; tables 2 and 3).

14. Claims 1-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agapiou as cited above.

The disclosure of Agapiou has been discussed above.

Agapiou lacks disclosure of using metallocene fluorides or antistatic agents in the composition used as the catalyst.

However, use of metallocene fluorides and antistatic agents is conventional in the art of olefin polymerization processes.

It would have been obvious to one of ordinary skill in the art to apply that skill to the disclosure of Agapiou with a reasonable expectation of obtaining a highly-useful olefin polymerization method with the expected benefit of less reactor fouling.

15. Claims 1-23 and 26-34 are rejected under 35 U.S.C. 102(b) as being anticipated by McCullough, US Pre-Grant Publication US 2002/0032287 A1 (hereafter referred to as McCullough).

McCullough discloses the invention as claimed (paragraphs 0017, 0085, 0094-0100, 0106; examples 4, 10-17, 22).

Art Unit: 1755

16. Claims 1-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCullough as cited above.

The disclosure of McCullough has been discussed above.

McCullough lacks disclosure of the use of antistatic agents in its polymerization process.

However, such an elementary modification would have been well within the skill of the routineer in the art.

It would have been obvious to one of ordinary skill in the art to apply that skill to the disclosure of McCullough with a reasonable expectation of obtaining a highly-useful olefin polymerization method with less reactor fouling.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Pasterczyk whose telephone number is 571-272-1375. The examiner can normally be reached on M-F from 9 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

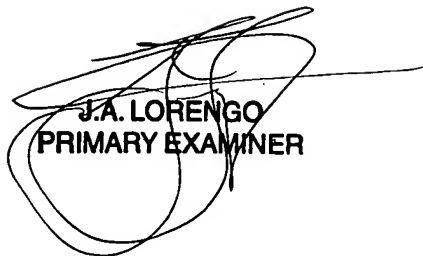
Art Unit: 1755



J. Pasterczyk

AU 1755

3/17/05



J.A. LORENZO
PRIMARY EXAMINER